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occultation was observed by Messrs. HOLDEN and KEELER with the thirty-six-inch equatorial and by Professor SCHAEBERLE with the twelve-inch. From 14^h onwards the images had been very unsteady (weight 1) owing to a high wind; but just at the moment of the disappearance of the planet the seeing was average (weight 3). With the large telescope the observations were made by E. S. H., and noted on Chron. 1667 by J. E. K. The observed times reduced to Pacific standard time (Greenwich m. t. *minus* 8^h) were:

	h.	m.	s.	
1890, April 8	17	23	 ; sun rises.
	17	48	07.4	; Contact I.
	17	48	39.7	; Contact II.

Professor SCHAEBERLE'S observations were:

17	48	5.9	; Contact I.
17	48	39.5	; Contact II.

With the large telescope it was noted that the point of first contact on *Mars* was near to the preceding end of *Mare Sirenum*. *Nix Olympica* was visible. The unusual illumination of the sky, caused by the daylight and by the proximity of the moon, gave to the red parts of *Mars* a decidedly smoky appearance, quite different from the more vivid color under ordinary conditions. There was no shade on *Mars* parallel to the limb of the moon at any time, such as has been observed (here and elsewhere) at occultations of *Jupiter*. The limb of *Mars* suffered no distortion. Professor SCHAEBERLE'S notes follow:

"*Mars* appeared dark red, tinged with brown. The moon's surface was very much brighter than that of *Mars* and decidedly yellow. Not the slightest distortion of the planet's outline could be detected."

E. S. H., J. M. S., J. E. K.

OCCULTATION (RE-APPEARANCE) OF *JAPETUS*, 1890, APRIL 9.

Dr. MARTH, in his indispensable "Ephemerides of the Satellites of *Saturn*," pointed out that on April 9, *Japetus*, the VIII Satellite of *Saturn*, would reappear from its occultation by the ball of the planet within the space between the gauze-ring and the planet, and after moving across this space would again be occulted by the ring, and would again reappear beyond the bright ring. Only the first part of this interesting phenomenon was observable at Mount Hamilton. Preparations to observe it were made by Mr. KEELER and

myself with the great telescope, and by Mr. BARNARD with the twelve-inch.

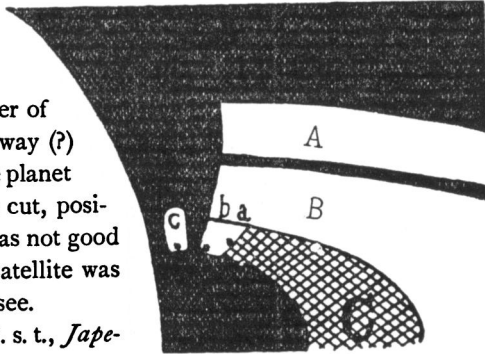
The seeing was generally good (weight 4 on a scale of 5). A magnifying power of about 700 was used by E. S. H. and of about 900 by J. E. K. The times given here are Pacific standard time (8^h slower than Greenwich mean solar time). The observations follow:

The *white spot* reported on *Saturn's* rings was specially looked for. Whenever the vision was especially poor for a brief moment, a slight confusion or lumpiness could be seen on rings A and B near the shadow of the ball on the ring. This disappeared the moment the vision improved. There seems to be little doubt that this phenomenon is due to bad atmospheric conditions, and to nothing else.

10^h 52^m.0, P. s. t., *Japetus* was first seen like a little knot on or near the square corner of ring B, or rather half-way (?) between the ball of the planet and ring B. (See the cut, position *c*.) The vision was not good at this time, and the satellite was extremely difficult to see.

At 11^h 02^m 48^s, P. s. t., *Japetus* was noted as in the prolongation of the following edge of the shadow of the ball on the rings. (See the cut, position *b*.) The vision gradually improved. At 11^h 07^m 03^s, P. s. t., it was noted that *Japetus* was in the position *b*, and this observation is satisfactory. At this time *Japetus* was about half as bright as *Enceladus*, which was near the preceding end of the ring.

At 11^h 11^m 03^s, P. s. t., *Japetus* was slightly within the gauze-ring (C), about as far from the inner edge of ring B as the width of ring A where the shadow of the ball crosses A. At 11^h 24^m 13^s, P. s. t., the satellite was barely visible. The preceding times were noted by E. S. H., and no other records were made, because the satellite was so faint that it appeared to the observer that no further observations of value could be made. It seems to be certain that even under the most favorable circumstances no object as faint as *Japetus* could possibly be observed through the CASSINI division between rings A and B.



At 11^h 39^m, P. s. t., J. E. K. noted that the satellite was no longer visible, and it was recorded that just before this it was distant from the inner edge of ring B by one-third of the width of the gauze-ring. (See the cut near *a*.) With a power of about 1400, J. E. K. could at times see the new division in ring A.

The satellite was carefully searched for by Mr. BARNARD with the twelve-inch, and no trace of it was seen or suspected. This result shows how delicate was the observation, and makes it probable that this phenomenon has not been observed elsewhere than at the Lick Observatory.

E. S. H., J. E. K., E. E. B.

CONTRIBUTIONS OF ALBRECHT DÜRER TO ASTRONOMY.

[EXTRACT FROM A LETTER OF DR. C. H. F. PETERS.]

Apropos of a note with the above title in *Publ. A. S. P.* (vol. II, p. 20), I have received a letter from Dr. C. H. F. PETERS, Director of the Litchfield Observatory, of Clinton, New York, a portion of which I take the liberty of reprinting here. Dr. PETERS says:

"In the last number of the *Publications* is a little note of yours on the two star-maps published by HEINFOGEL, with the figures of the constellations drawn by DÜRER, which specially interested me, as a copy of these maps came into my possession a few years ago.

"By an accident, some copies of these maps were discovered in Vienna, and Professor WEISS* gave to me the copy which he had exhibited at the Kiel meeting of the *Astronomische Gesellschaft*. (See *V. J. S.*, vol. 22, p. 269.) I take great pleasure in presenting these maps to you, as I know you appreciate such historical documents.†

* * * * *

"Compare on these maps *Cetus* or *Piscis australis*, *Gemini*, *Boötes*, *Hercules*, which are quite original with DÜRER, with modern drawings. *Centaurus cum Lupo* resembles the drawing in SUFI, and that upon the Arabic globes somewhat. *Andromeda* has, with DÜRER, a rather awkward position. In the *Progymnasmata* of TYCHO BRAHE we find a drawing of *Cassiopea* that resembles DÜRER'S. The general and principal difference between DÜRER'S and the modern figures consist in this; that the former represents the figures as seen on the outer surface of the globe—that is, with their backs towards us. Queer contortions of the head thus originated, as, for

* Director of the Imperial Observatory at Vienna.

† These have been deposited in the library of the Lick Observatory, and will be exhibited to the meeting of the Astronomical Society, May 31.